

REMARKS

Claims 1-25 are pending.

Claim 8 was objected to because it was missing.

Claims 10 and 14 were rejected for insufficient antecedent basis for the limitation "said pair of electrodes" in claims 9 and 13.

Claims 1 - 5 were rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (U.S. Patent No. 5,907,379).

Claims 6 - 13 and 15 - 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Asada et al. (U.S. Patent No. 5,745,207).

Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Asada as applied to claim 13 above, and further in view of Fukuyoshi (U.S. Patent No. 4,853,296).

Claims 19 - 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Asada as applied to claim 1 above, and further in view of Fukuyoshi.

In response to the objection of claim 8 and the Examiner's direction to re-number the claims, the claims 9 - 20 have been renumbered as 8 - 19. The dependent claims have been amended accordingly to reflect the re-numbering.

In response to the Section 112 rejection of claims 9 and 13 (now re-numbered as 8 and 12, respectively), the two claims have been amended to recite "said pair of substrates."

Section 102 Rejection of Claims 1 - 5

As understood, Kim et al. appear to disclose in Figs. 4 and 8 a data pattern comprising a bottom metal layer 401 and a top ITO layer 402. The top ITO layer is arranged in a manner to prevent the bottom metal layer from oxidation at the contact pad 47. The bottom metal layer is either chromium or molybdenum. Fig. 8 shows a gate

insulating layer 30 disposed below the metal layer 401. See generally Col. 3, lines 50 and following, and in particular Col. 4, lines 16 - 26.

An aspect of the invention recited in claim 1 is "a transparent conductive film formed over said wiring" wherein "[the] wiring includes a first layer of aluminum or an alloy comprising essentially of aluminum, and at least a second layer of material selected from the group including of molybdenum, aluminum, chromium, tungsten, silver, and copper." Kim et al. do not show this aspect of the invention. Kim et al. show only that their bottom metal layer is chromium or molybdenum. Kim et al. do not show a metal layer comprising "a first layer of aluminum or an alloy comprising essentially of aluminum" and "a second layer [of another metal]." As can be seen in Fig. 9 of Kim et al., the bottom metal layer 401 is separated from a substrate 1 by the gate insulating layer 30. There is no "first layer of aluminum..." Accordingly, claim 1 is not anticipated by Kim et al. Dependent claims 2 - 5 similarly are not anticipated by Kim et al., for at least this reason.

The Section 102 rejection of claims 1 - 5 is believed to be overcome.

Section 103 Rejection of Claims 6 - 13 and 15 - 18

Applicants earnestly submit that Asada et al. do not show a "wiring includes a first layer of aluminum or an alloy comprising essentially of aluminum, and at least a second layer of material selected from the group including of molybdenum, aluminum, chromium, tungsten, silver, and copper." Also, as already discussed above, Kim et al. do not show such a wiring. Consequently, claims 6 - 7 and 9 - 13 (now renumbered as claims 8 - 12), which depend from claim 1, are believed to be patentable over the cited art, for at least the reason that the cited art do not teach or suggest the claimed wiring structure of a first layer of aluminum or an alloy and a second layer of ... molybdenum, aluminum, chromium, tungsten, silver, [or] copper."

As to claims 15 - 18 (now renumbered as claims 14 - 17), an aspect of the invention recited in claim 14 (as renumbered) is "one of said drain lines, said gate lines and said counter voltage lines includes a multi-layered structure covered with a

transparent conductive film, said multi-layered structure comprising an aluminum layer or an alloy layer comprising essentially of aluminum and a high-melting point metal layer” As noted above, Kim et al. show only that their bottom metal layer 402 (Fig. 8) is chromium or molybdenum. See Col. 4, lines 21 - 22. Kim et al. do not show “a multilayered structure ... comprising an aluminum layer or an alloy layer comprising essentially of aluminum and a high-melting point metal layer.” Similarly, Asada et al. do not show an aluminum layer and a high-melting point metal layer. The cited references therefore do not render obvious the invention as recited in claims 14 - 17 (as renumbered).

As to claim 19 (now renumbered as claim 18), the claim recites an aspect of the invention in which the “counter voltage line comprising a triple-layered structure including an alumina first layer, a high-melting point metal second layer, and a third layer of aluminum or an alloy comprising essentially aluminum.” Each of Kim et al. and Asada et al. fails to show a triple-layered structure.

Fukuyoshi is directed to is directed to an “electrode plate for a color display device according to this invention ... in which color filters, transparent electrodes and a metal conductor at least partly containing nickel are piled up in the mentioned order on a transparent substrate. Col. 2, lines 52 - 56. Fukuyoshi describes a structure consisting of “a member of a group consisting of chromium, molybdenum, tungsten and titanium, a layer of a member of a group consisting of aluminum and aluminum alloys, and a layer of nickel or nickel alloys.” Col. 3, lines 16 - 21 and col. 8, lines 5 - 10. Since the Fukuyoshi metal conductor “at least partly contain[s] nickel” as a top layer metal (followed by aluminum and then chromium), one of ordinary skill in the art would not be led to the recited triple-structure layer having an aluminum-based top layer. Fukuyoshi neither teaches nor suggests the particular triple-structure recited in claim 18 (as renumbered).

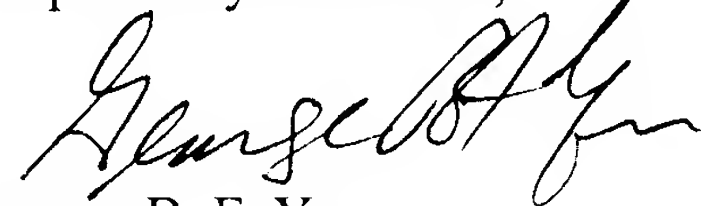
The Section 103 rejections of the claims are believed to be overcome.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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